TGuide S96 Magnetic Soil / Stool DNA Kit

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TGuide S96 Magnetic Soil /Stool DNA Kit

Cat.no. GDP812

Kit Contents

Contents	GDP812 (96 preps)
Buffer SA	120 ml
Buffer SC	25 ml
Buffer SH	25 ml
Buffer GFAP	1 plate (96×500 µl/well)
Buffer RDP	2 plates (96×700 µl/well)
Buffer PWDP	2 plates (96×700 µl/well)
MagAttract Suspension GSP1	1 plate (96×400 µl/well)
Buffer TB	1 plate (96×100 µl/well)
1 mm Grinding Beads	30 g
3 mm Grinding Beads	80 g
KF 96-Tip Comb	1 set
Handbook	1

Storage

This kit can be stored at room temperature (15-30°C) under dry condition for 12 months. If a precipitate has formed in Buffer, please place the buffer at room temperature or warm at 37°C for 10 min to dissolve the precipitate.

Introduction

The kit adopts a unique buffer system, which can remove humic acid from soil samples as much as possible. The grinding beads supplied in this kit can effectively crush various complex components in the soil sample to ensure the integrity of extracted genomic DNA from the soil. The kit is also suitable for extracting genomic DNA from stool samples.

The purified DNA has few impurities and good integrity. It can be directly used in downstream molecular biology experiments such as PCR, RT-qPCR, enzyme digestion, high-throughput sequencing, etc.

Features

- **Wide application:** It is applicable for the extraction of environmental samples such as flowerbed soil, flowerpot soil, farmland soil, forest soil, silt, laterite, black soil, dust and other soil types, and also applicable for the extraction of stool samples.
- **Simple operation:** The extraction can be completed in a relatively short time.
- **High purity:** The extracted DNA has high purity and can be directly used in downstream experiments.

Notes: Please read this notes before using this kit

1. Higher yield can be achieved with fresh samples. Please refer to the preservation instruction for different samples before sampling.
2. Be careful not to touch the precipitate in any supernatant collection steps, or else the column would be blocked and the product purity would be affected.
3. Excessive DNA may inhibit the downstream PCR reaction. In this case, it is recommended to dilute the DNA template before use.
4. Before use, check whether Buffer SC has precipitation. If there is precipitation, please heat it at 37°C until it is completely dissolved before use.
5. RNA may remain in stool samples. To remove RNA, please prepare RNase A solution yourself.
6. A small amount of precipitate may appear on the bottle wall of Buffer SH after placing for a long time, but the extraction effect of the test will not be affected.

Protocol

I. Sample treatment

A. Soil sample

1. Add 0.25 g of sample to a 2 ml centrifuge tube, add 500 µl of Buffer SA and 100 µl of Buffer SC (700 µl of Buffer SA and 140 µl of Buffer SC are needed for dry soil samples), then add 8 pieces of 3 mm grinding beads and 0.2 g 1 mm grinding beads, and uniformly mix using TGrinder H24 Tissue Homogenizer (TIANGEN, OSE-TH-01, self-provided) (6 m/s speed oscillation for 20 sec, interval for 10 sec, 2 cycles in total). After mixing, lyze at 70°C for 15 min.
2. Centrifuge at 12,000 rpm(~13,400xg) for 1 min and transfer the supernatant (about 500 µl) to a new 2 ml centrifuge tube.
3. Add 200 µl Buffer SH, mix well, vortex for 5 sec, and place at 4°C for 10 min.
4. Centrifuge at 12,000 rpm for 2 min at room temperature.

B. Stool sample

1. Add 0.25-0.5 g of sample to the 2 ml centrifuge tube (transfer 200 µl of liquid sample to the centrifuge tube), add 500 µl of Buffer SA and 100 µl of Buffer SC, then add 8 pieces of 3 mm grinding beads and 0.2 g 1 mm grinding beads, (RNA may remain in stool sample To remove RNA, it is recommended to add 10 µl RNase A (self-provided)) and vortex to mix evenly or and uniformly mix using TGrinder H24 Tissue Homogenizer (TIANGEN, OSE-TH-01, self-provided) (6 m/s speed oscillation for 20 sec, interval for 10 sec, 2 cycles in total). After mixing, lyze at 70°C for 15 min.

   Note: For gram-positive bacteria that are difficult to break the cell wall, the temperature can be increased to 95°C to promote lysis efficiency.
2. Centrifuge at 12,000 rpm(~13,400×g) for 1 min and transfer the supernatant (about 500 µl) to a new 2 ml centrifuge tube.
3. Add 200 µl Buffer SH, mix well, vortex for 5 sec, and place at 4°C for 10 min.
4. Centrifuge at 12,000 rpm for 2 min at room temperature.

II. Operation steps of TGuide S96

A. Preparation of reagents

Take out the vacuum package prepackaged 96-deep-well plate from

the kit, mix it upside down for several times to resuspend the magnetic beads. Remove the vacuum package, gently shake the 96-deep-well plate to concentrate the reagent and magnetic beads to the bottom of the 96-deep-well plate (or centrifuge at 500 rpm for 1 min by the plate centrifuge), carefully tear off the aluminum foil sealing film before use to avoid vibration of the 96-deep-well plate and prevent liquid spillage.

B. Reagent and plate distribution

Plate position	E	F	G	H
Reagent	GSP1 400 µl	RDP 700 µl	PWDP 700 µl	Blank
Plate position	A	B	C	D
Reagent	GFAP 500 µl	RDP 700 µl	PWDP 700 µl	TB 100 µl

C.TGuide S96 automatic running program

1.Add 400 µl of treated sample solution to the 96-well-plate of Buffer GFAP. Put the KF 96-Tip Comb in the 96-deep-well plate of MagAttract Suspension GSP1. Lay out the machine according to the plate position distribution in step B.

2.Run the TGuide S96 soil/stool genomic DNA extraction program

Step	Plate Position	Mixing volume (µl)	Mixing speed	Mixing time (min)	Precipitation time (sec)	Adsorption times	Adsorption speed (mm/s)	Heating plate	Heating temperature (°C)	Suspension time (min)	Capture mode
Capture Tip Comb	E	—	—	—	—	—	—	—	—	—	Capture
Collect Beads	E	400	Medium slow	0.5	30	1	1	—	—	—	—
Binding	A	900	Medium slow	10	30	1	1	—	—	—	—
Wash-I	B	700	Medium slow	3	30	1	1	—	—	—	—
Wash-II	F	700	Medium slow	3	30	1	1	—	—	—	—
Wash-III	G	700	Medium slow	3	30	1	1	—	—	—	—
Wash-IV	C	700	Medium slow	3	30	1	1	D	60	8	—
Elution	D	100	Medium	8	30	2	1	D	60	—	—
Finish	F	—	—	—	—	—	—	—	—	—	Release

3.After the TGuide S96 automatic nucleic acid extraction and purification program is completed, transfer the DNA in the 96-deep-well plate to new tubes and store under appropriate conditions.